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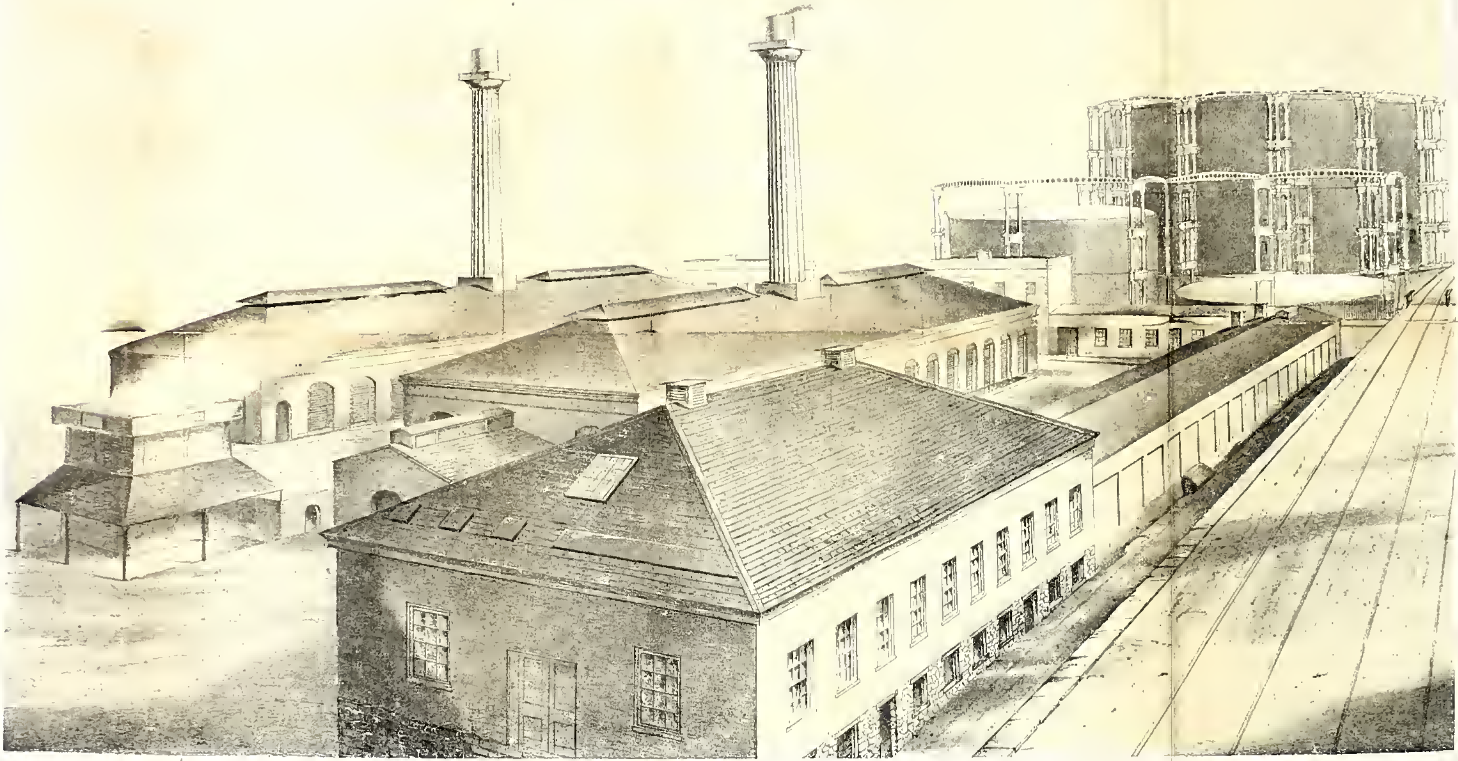
SIXTEENTH
ANNUAL REPORT
OF THE
TRUSTEES
OF THE
PHILADELPHIA GAS WORKS,
TO THE
SELECT AND COMMON COUNCILS OF THE
CITY OF PHILADELPHIA.

JANUARY 24, 1851.

PHILADELPHIA:
PRINTED BY L. R. BAILEY, 26 NORTH FIFTH STREET.
1851.



PHILADELPHIA GAS WORKS.

From the South West

John C. Cresson
ENGINEER

7

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REPORT.

TO THE SELECT AND COMMON COUNCILS:

THE Trustees of the Philadelphia Gas Works, present in the annexed financial statements, and in the report of the Engineer, a clear and comprehensive summary of their proceedings for the last official year.

The report of the Engineer, exhibits the details of the manufacture, distribution, and use of the gas produced at the Works; the steady and rapid increase of the demand; and such other matters connected with these branches, as have usually been embodied in our communications to Councils.

It also contains a full description of the Works on the Schuylkill, as they have been completed, and now occupy the whole of the site dedicated to them by the corporation.

The suggestions of the Engineer, in regard to the timely increase of the manufacturing capacity of the establishment, are fully concurred in by the Trustees; and they respectfully ask the early attention of the city authorities to such measures as will enable them to make the enlargements the public wants may require.

It is quite obvious, that before the close of the year 1851, the demand will greatly exceed the maximum ability of the present arrrangements, and the policy of meeting all the exigencies which may hereafter arise, by Works entirely under the control of the corporation, is so clear, that it is not necessary for the Trustees to present any argument in its favour.

The sum of three hundred thousand dollars named by the Engineer, will probably suffice for the purchase of a suitable site, the erection of one section of a gas manufactory with its appropriate gas-holder, and the laying of a large main pipe from the new Works to those already completed.

Although the demand for gas now seems large, it is quite probable that it has not yet been introduced into more than one-third of our private dwellings, and it is to them that we must mainly look for our future increase of custom.

A continuance of the established financial arrangements, for the gradual accumulation of a fund to pay off the debt when it falls due, would doubtless enable the Trustees to obtain the money on highly advantageous terms. The principles, upon which the business of the Works has heretofore been conducted, have led to such prosperous and satisfactory results, that it is believed an adherence to them will insure an ample and profitable return, on any capital which may be invested in judicious enlargements.

BY ORDER OF THE TRUSTEES.

F. FRALEY, *President.*

Office Philadelphia Gas Works,
January 24, 1851.

Attest :

WILLIAM FENNELL, *Register.*

THE ENGINEER'S REPORT.

TO THE TRUSTEES OF THE PHILADELPHIA GAS WORKS:

GENTLEMEN—

The undersigned has the honour to present his Fifteenth Annual Report, exhibiting the operations of the Works for the year 1850, and their condition at the close of that year.

The extraordinary increase of demand for gas commencing in the month of November, 1849, immediately after the completion of the large street mains, has been maintained with but little abatement to the present time, the increase for several months being over 40 per cent. and the average increase of the entire year more than 34 per cent. In the summer months the increase upon the corresponding period of the year before, fell considerably below the average of the year in consequence of the general adoption of an arrangement for the closing of stores at an early hour in the evening; but upon the return of the autumnal season of business, the demand again rose to its previous high ratio, and pressed so closely upon the means of supply, as to require the new sections of apparatus to be put at work as rapidly as they could be completed.

The quantity of gas manufactured during the year is, one hundred and eighty-two millions and sixteen thousand cubic feet, making the entire production of the Works since their foundation, nine hundred and ninety-seven millions eight hundred and fifty-nine thousand feet.

This product has been distributed in the following proportions to the various municipal districts supplied from the Works.

To the District of Spring Garden 17,650,600 cubic feet, to Southwark 3,457,800 cubic feet, to Moyamensing 417,900 cubic feet, to the City proper 160,489,700 cubic feet. The latter amount includes the gas used at the Works and offices of the Trustees, and the loss occasioned by leakage of mains and other apparatus.

The maximum production in 24 hours was eight hundred and eighty-seven thousand cubic feet, made on the 22d of December, and the maximum consumption in the same period was one million and twelve thousand* feet on the 23d of that month. The greatest number of retorts in action is 216, being within 24 of the whole number the buildings contain, and consequently leaving a margin for future increase of only nine per cent.

The materials used for the manufacture of gas are five hundred and ninety-eight thousand two hundred and eighty-four bushels of coals, thirty-two hundred and eighty-two barrels of rosin, five hundred and nine thousand five hundred and thirty-nine bushels of coke, and one hundred and eleven thousand six hundred and sixty-eight bushels of oyster-shell lime.

A summary of the Carbonizing account is exhibited in the annexed tabular statement.

Coal in store January 1, 1850,	332,782	Bushels.
" received during "	511,536	"
	844,318	"

Coal carbonized,	598,284	Bushels.
Swept away by freshet in July,	11,000	"
In store January 1, 1851,	235,034	"
	844,318	"

Rosin in store January 1, 1850,	2,800	Barrels.
" received in the year,	986	"
	3,786	"

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* A more definite notion of the magnitude of this volume of gas will be obtained by converting it into gallons, of which it will make seven and a half millions or about the same as the daily consumption of hydrant water in the summer months.

Rosin distilled in the year,	3,282	Barrels.
" lost by freshet,	98	"
" in store January 1, 1851,	406	"
	3,786	"

Coke on hand January 1, 1850,	84,500	Bushels.
" made in the year,	813,497	"
	897,997	"

Coke used in heating retorts,	509,539	Bushels.
" " offices and yard,	8,000	"
" lost by freshet,	10,000	"
" sold during the year,	285,458	"
" on hand January 1, 1851,	85,000	"
	897,997	"

Considerable quantities of these materials were washed away by the great flood that occurred in the Schuylkill river in July last, by which also some damage was done to the most exposed parts of the Works on the river front; and gas making operations were suspended for several hours. The flood of September, although of greater height than its predecessor, occasioned but little damage or loss of property to the Works, but again stopped the manufacture of gas by the submergence of much of the apparatus, and moreover cut off the supply to the city by overflowing the outlet of one of the old gas-holders, and thus filling a considerable extent of street mains. Such changes have been made in the apparatus submerged by these overflows, as is hoped will prevent the recurrence of a suspension of gas making from any similar event, and it is intended to raise the outlets of the lowest gas-holders beyond the reach of all probable floods, as soon as the cessation of the winter demand shall allow them to be thrown out of use.

The reduction of the motive power charge on bituminous coal coming through from Pittsburg, made by the Canal Commissioners in the tariff of tolls for 1850, which was announced in the last annual report, has had the effect then anticipated, of bringing into our market a large quantity of this valuable material, and accordingly more than half the year's supply has been derived from that quarter. In consequence of the superior richness in bitumen of this variety of coal, a gas of high illuminating power is obtained from it without the addition of any resinous material, the use of which has been discontinued since the regular introduction of the Pittsburg coal commenced in May last.

In respect to yield of gas, these coals are not quite so profitable as the best varieties obtained from other quarters, nor is the coke quite so lively and free burning; but notwithstanding these disadvantages it will undoubtedly be consistent with good policy to continue the use of them in considerable quantity, so long as a supply can be secured at a moderate price.

To meet the large accession of demand for gas, already alluded to, a corresponding extension of the means of production has been necessary.

The additions to the Works comprise a retort house 95 feet long by 52 feet wide, containing a double bench of ovens with 60 retorts and their requisite connexions; a purifying house 47 feet square, in which are 4 purifiers, each 15 feet square; 4 jet washers 40 inches diameter and 15 feet high; a double series of 6 inch condensing pipes having an aggregate condensing surface of 1200 square feet, a large station meter capable of measuring 20,000 feet of gas per hour, and a gas-holder of very large capacity, to be presently described.

These, it will be perceived, constitute a complete suite of apparatus for distilling, washing, purifying and measuring gas; in brief, a complete gas factory. They are built symmetrical and in connexion with the section of works constructed two years ago, and embrace all the improvements then introduced; making them equally effective and convenient. The coal stores built last year south of High street have been enlarged by the construction of another section, adding about 35 per cent. to their capacity.

The most remarkable addition to the Works, is the new Telescopic Gas-holder, 140 feet in diameter and 70 feet in height, with a capacity of more than a million of cubic feet, constructed upon a novel plan especially adapted to machines of such large dimensions, of which this is believed to be the first example. It has been in constant use from the day it was first filled with gas, and is found to fulfill the most sanguine anticipations of its success in every respect; working as easily and controlably as any other we have in use, and with greater steadiness. An opportunity such as may not soon again offer for testing completely its stability in withstanding high winds, was afforded by the great storm of the 23d of December; which was of such violence as to prostrate several new buildings in different parts of the city, among which was a large brick hotel, nearly completed, in the immediate vicinity of the Works.

On this occasion the new gas-holder was raised nearly to its utmost height, having in it about a million feet of gas; and while it was thus elevated, and the gale at its greatest violence, I made a careful examination of it in every part; passing around it at the base and also on the top, and inspecting each guide and column, without being able to detect any tremor of the frame, or the slightest indication of undue strain. It is a source of no little satisfaction that neither human life nor limb was sacrificed in the prosecution of this work, notwithstanding the dangerous nature of many parts of it, especially of the rock excavation in the tank, for which it was necessary to use several tons of gunpowder and many thousand blasting tubes, in the midst of a force of several hundred labourers engaged in a confined space, and directly alongside one of the principal thoroughfares in the city. The only person seriously injured was a labourer upon whom a loose stone rolled from a bank beneath which he incautiously placed himself; his injuries were severe but happily not fatal. The masonry of the tank was executed by Mr. Dennis Kennedy. The contractor for the gas-holder was Mr. Joseph H. Amer, and for the supporting frame and columns, Messrs. Merrick & Son, to all of whom much credit is due for the faithful and skillful execution of the work.

The extent of main pipes laid in the streets during the year is 25,242 lineal feet, composed of 6666 feet of 2 inch, 9513 feet of 3 inch, 6345 feet of 4 inch, and 2718 feet of 6 inch; making the aggregate length of mains now laid down, 500,267 feet, or about 94¾ miles.

The number of meters set and services put in is 1079, the whole number in use being 9238, with about 110,000 feet of service pipe, or over 20 miles in length.

The registry of new applications amount to 2227; deducting from which the removals and discontinuances, shows an increase of 1077 customers, using 20,542 lights; there have also been added 85 new street lamps.

The whole number of customers on the books of the office to January 1st, is 9216, using 115,004 lights. The number of public lights is 1464 in the streets, 50 in the market houses, and 62 in the public squares.

The districts of Spring Garden, Southwark and Moyamensing report 28,056 private and 391 public lights, which, added to those in the City, shows the whole number supplied from the Works to be 145,027. More minute details of these several particulars are given in table A.

As it may be considered of some interest to ascertain the cubical content of this extensive line of street main and service pipes, having a length of nearly 115 miles, a computation has been made from which it appears that their entire capacity is about 75,000 cubic feet, or 550,000 gallons. This quantity of gas was originally passed from the Works into the pipes as they were successively brought into use, and was from that time devoted forever to the purpose of forming the gaseous connexion between the Works and the consumers.

An erroneous opinion prevails to some extent that the main pipes in the streets are in some sort reservoirs, whose contents may be made available in supplying a deficiency of capacity of the real reservoirs or other source of supply, and consequently, that increasing the size or number of these mains may, in a measure, compensate for the insufficiency of reservoirs above ground or of original supply.

If this popular error was one of mere theoretical character it might well be allowed to pass without comment; but as it has a practical bearing from which inconvenience to the community might result, and perhaps, in some instances, has already been experienced, it becomes a public duty to show its fallacy. To do this it is only necessary to consider a few of the circumstances of the case.

When a large inflexible pipe lying horizontally or nearly so, under ground with both its ends closed, is tapped by any number of small tubes rising above the surface of the ground, it is obvious that its contents, whether of gas or water, could not, by their own action, escape upward through the small tubes, unless previously subjected to a pressure greater than that of the external atmosphere; in which case the quantity escaping would be only equal to that produced by the expansion of the confined fluid on removing the surplus pressure: which would be about one part in 400 of coal gas for each inch head of water, and about one part in 10,000 of water for a head of 80 feet. To obtain anything beyond this, it will be necessary either to compress the pipe, or to force out its contents by the introduction of a fresh supply from some external source, which supply must be equal to the quantity abstracted. It follows, therefore, that for every gallon taken from the main, a gallon must be allowed to flow into it from the original fountain or reservoir, and that however large the capacity of the main this continues equally true. With insufficient supply from the fountain head, a large main may produce serious inconvenience. To which effect a case in point may be cited from the annals of these Gas Works.

Early in the year 1848, the demand for gas had reached a magnitude evidently greater than could be supplied by the mains then in use, without some inconvenience to consumers on the lowest parts of the line; as was attested by numerous complaints from the sufferers, and urgent solicitations to have a larger main laid down. The Trustees of the Works were aware that the quantity of gas then consumed, notwithstanding the inadequacy of the mains, was as great as could be furnished by the Works and gas-holders at that time existing; and not entertaining the erroneous opinion in question, they thought it necessary to take the precaution of increasing the source of supply, before adding to the facility of exhausting it by the enlargement of the mains. In this proceeding they were fully justified by the event; for as soon as the new mains came into use, it was found that the new Works and large additional store-room, were barely sufficient to meet the great increase of consumption.

The accounts for labour and materials used in the late extensions have nearly all been rendered and adjusted for final settlement, a few only of minor importance remaining outstanding: the amount of these is known with sufficient precision to show very nearly the cost of all these improvements, which will not materially vary from the original estimates. There has been paid during the year for permanent account $ 194,028 06, of which the sum of $ 58,500 is for liabilities reported as outstanding for the extensions of the previous year. The accounts to which these payments are chargeable are, for Works $ 117,790 44, for street mains $ 44,565 73, and for service pipes and meters $ 31,671 89. The bills remaining unpaid amount to $ 56,200. Say for account of Works $ 39,600, for street mains, service pipes and meters $ 16,600.

The premises appropriated by the city authorities for the use of the Gas Works, were at first supposed to be sufficiently spacious for all their requirements to a very remote period; but so rapid has been their growth that the ground has already been entirely occupied by the structures now erected, and the Works, so far as this locality is concerned, may be considered as completed: an event that marks an era in our history, and offers an appropriate occasion for placing upon record a general description of the buildings and apparatus belonging to the establishment; accompanied by drawings exhibiting its principal outlines. A brief account of the state of the Works was reported to the Trustees on the occasion of the assumption of them by the City in 1841, a comparison of which with their present condition, will serve to show the progress made in the interval of ten years.

The plot originally set apart for the Works comprised two rectangular blocks bounded by public streets and the river front, and separated by a fifty feet street into nearly equal parts, each being 306 feet 6 inches by about 270 feet. By the erection of wharves on the Schuylkill river, the westernmost lot has been extended 170 feet westward to the Port Warden's line; and a farther addition of space has been acquired on the south by purchase and lease. The latter is separated from the original premises by the High street bridge and railroad, and is devoted to the storage of coals, pipes and other materials; its dimensions are 500 feet by 200. The entire area occupied is about seven and a half acres, with a river front of 800 feet.

The buildings constituting the Works have been arranged in two general divisions or groups, distinguished in the books of the establishment as divisions A and B, but conveniently described as the old and new Works. Each division is composed of subordinate sections numbered 1, 2, 3, 4, in the old, and 1 and 2 in the new group.

Every section is a complete and independent gas factory, capable of being worked unconnected with all the others, as a separate and distinct establishment; but the whole are arranged symmetrically and are susceptible of connexion, so that the gas produced in any section may be passed through the purifying apparatus and meter of any other, at will.

The separate buildings comprise two retort houses, two purifying houses, two meter rooms containing six station meters and four conical governors, two ranges of workshops, and coke sheds and offices, three coal stores, two perpetual lime kilns, and eleven gas-holders of various dimensions.

The old Works, embracing all that was built prior to the year 1848, comprises four sections containing 120 retorts, built in two contiguous ranges or retort benches, covered by one roof and connected with one chimney stack. This retort house is 195 feet in length and 48 feet in width; it is built of brick, and rests upon arches supported by cast iron girders; giving space for the storage of 50,000 bushels of coals beneath the floor. The height of the chimney is 100 feet; the roof frame is of wrought iron covered with slate. The jet washers, condensers and purifiers are contained in a two story brick building 87 feet long by 35 feet wide, situated on the north of the retort house, with which it is longitudinally parallel. The jet washers are 8 in number, 2 attached to each section of 30 retorts; they are in the form of large columns upon square bases, all of cast iron; their dimensions are 40 inches diameter and 15 feet high, each pair being connected consecutively, so that all the gas from the section passes through both. Auxiliary to these, are two smaller jet washers, placed in close proximity to the hydraulic main. The condensers are composed of 4 separate series of vertical cast iron pipes 6 inches in diameter, standing upon boxes of the same material of sufficient capacity to contain the condensed liquids of several days' work. The condensing surface for a section is 600 square feet, disposed in 18 of the upright pipes connected with 9 boxes. The purifiers are arranged in the usual quadruple series, connected by a rotating hydraulic valve. The boxes are 15 feet long by 5 feet wide, containing three tiers of cast iron baskets or gratings, upon which is placed a layer of quick lime 2 inches in thickness, giving 675 square feet area of purifying surface for each section, or 2700 feet for the entire range of 120 retorts.

The meters are 4 in number, having 6 inch outlets, and drums measuring 45 cubic feet to a revolution; the registry extending from 10, to 10 million cubic feet. Each meter is provided with a tell-tale and clock, and with water line and pressure gauges. These 4 meters are directly connected by a 10 inch receiving main with 8 gas-holders of 50 feet diameter and 35,000 cubic feet capacity, from which the gas passes by 2 ten inch outlet mains into 2 ten inch governors attached to the street main. Since the construction of the new Works, 2 transverse mains of eight inches diameter have been led off from these meter outlets to those of the new meters, forming the connexion between each division and the gas-holders of the other.

The range of offices, meter room and fitting shop belonging to this division, is 133 feet by 20, the coke shed 170 x 24, and the coal shed 80 x 50, arranged around a hollow square.

The new Works differ from the old in several respects. They are divided into two sections with 8 inch connexions; the purifiers give more surface for the same number of retorts, and the general arrangement is more convenient and gives greater security from accidental obstructions.

The retort house is of the same length as the other, but 4 feet wider, being 195 x 52; externally it corresponds with the other in style of architecture, and is roofed in the same manner; the number of retorts is the same, to wit, 120. The auxiliary washers are much larger, being 24 inches diameter; the principal washers are similar to those in the old house, being 8 in number. The condensers are arranged in double series, four pipes standing on one box; the surface for 120 retorts is 2400 feet.

The purifying boxes are 8 in number, 15 feet square, giving 4050 square feet of purifying surface for the two sections. They are supported on brick piers entirely independent of the floor, and elevated so as to allow plenty of light and air to the connecting pipes and drips in the cellar below. The building in which these are placed is 91 feet by 47; it is roofed with slate, as are all the buildings on the premises. There are but two meters to this division, having 8 inch outlets, and drums giving 163 cubic feet to a revolution. Two 10 inch mains connect them with the three largest gas-holders, from which two 12 inch mains return to the conical governors in this meter room.

The gas-holders immediately connected with the new division, are two of 80 feet diameter containing 200,000 cubic feet each, and one of 140 feet diameter with a capacity of 1 million of cubic feet, all of the telescope form. The old Works communicate with these through the two 8 inch mains before described. The guide frames of these gas-holders are entirely of cast iron; those of the 80 feet holders are composed of 6 stands of fluted columns arranged in pairs, with an entablature to each pair, and raised to three tiers in height, there being 36 columns to each gas-holder, the whole bound together at the top by cast iron open work girders. The large gas-holder is guided by 12 sets of columns standing in groups of three raised 4 tiers high; the lower tier fashioned and proportioned according to the Tuscan order, the second Doric, the third Ionic and the upper Corinthian; the number of columns being 144 and the whole height of the structure above the coping of the tank 74 feet; the depth of the tank is 36 feet.

The extent of the range of offices, smith shop and meter house of the new division is 122 x 20, the coke shed, store rooms, &c., 270 x 22 feet.

The southern coal store is constructed in four sections 100 feet long by 30 feet wide, joined side by side so that they constitute one building 100 x 120 feet, with the roof supported on 5 ranges of stone piers 18 feet high: its capacity is about 200,000 bushels.

Between the retort houses is an underground coal store, 40 x 190 feet, capable of storing 40,000 bushels.

The lime kilns are built of stone in the usual form of perpetual kilns for calcining oyster-shells.

In constructing the more recent buildings, they have been adapted as far as practicable to the use of labour-saving machinery for the storage of coals and for the conveyance of these and other heavy materials to the various points where they may be wanted. The railways and machinery for these purposes it is designed to construct in the course of the current year, and an important reduction of the labour and expense required for these operations is expected to result from the improvement.

The progressive growth of the establishment in its various departments, is exhibited in several condensed statements arranged in tabular form. The usual monthly details of new customers and increase of lights and mains, and of sales of gas, are given in tables A to E, inclusive. Those marked from F to I, exhibit the aggregates of these items for every year since the establishment of the Works.

In concluding this descriptive account of the Works, a few remarks upon some of the causes to which their uninterrupted prosperity and rapid growth are in a measure attributable, may not be out of place. At the commencement of the enterprise it was determined that the construction of the Works and the system of management should be such as might lead to the greatest attainable security against the dangers and annoyances then generally supposed to be necessarily attendant on the use of gas lights, the most frequent origin of which was either in defectiveness in the apparatus and pipes, imperfect purification of the gas, or irregularities of quality and supply. A system of regulations was adopted at an early period, prescribing with great exactitude the materials, sizes, manner of connecting, and degree of tightness of all pipes and other fittings, and strictly prohibiting any unauthorized interference with, or disturbance of such fittings.

The most efficient and unfailing means of separating from the gas its known impurities, are required to be carefully applied according to the indications of delicate chemical tests. A high standard of illuminating quality has been adopted and vigilantly maintained either by the use of the proper varieties of coals, or by the addition of a proportion of gas from resin when the coals had fallen below the proper standard. The quality aimed at is that found in gas having, when purified, a specific gravity one-half that of atmospheric air, the economical value of which is such as is designated 20 candle gas, that is to say, the light of an argand burner consuming 4 feet an hour, is equal to that of 20 sperm. candles 6 to a pound. The desired result as to quality has been attained without the aid of resin, by the use of certain varieties of coals from Western Pennsylvania, or of a proper mixture of cannel with New Castle and other coals.

The success with which these measures have been carried into effect is forcibly demonstrated by the entire freedom of our streets and houses from the peculiar odour of gas, by the remarkable diminution of the loss from leakage usually experienced, amounting in some works to 20 and 30 per cent. of the quantity made, but falling as low as 2 per cent. in ours, and finally the general introduction of gas lighting not only in stores and places of public resort, but also in the parlours and sleeping apartments of dwellings of every class.

An important topic claiming attention at this time, is the prospective demand for gas, upon which must be based our estimates for enlargements of manufacturing capacity required during the ensuing season.

Some degree of embarrassment has always been experienced in the endeavour to arrive at a definite and satisfactory determination of a question involving contingencies that cannot be foreseen nor subjected to any known rule of calculation.

For several years there has appeared to be good reason for the supposition that the ratio of increase was near its eventual maximum, and must thenceforward decline until it should reach a moderate average, which might be maintained for a number of years without any important variation. But these expectations have been annually exceeded by the result, and the year just closed has surpassed all that have preceded it not only in the actual amount of the increase but also in its ratio or per centage above the previous year. Part of this great increase is undoubtedly attributable to the additional head of supply afforded by the large mains completed in the autumn of 1849; but the continuance of a high ratio of increase in the months of November and December, when the comparison was no longer affected by this circumstance, is an indication which it may not be entirely safe to overlook in our estimate for the incoming year.

The District of Spring Garden is engaged in the construction of Works from which their own supply will be obtained as soon as they are put in operation, which is expected to take place in a few months, and the City Works will consequently be relieved to the extent of the consumption of that district, amounting to nine per cent. of the whole production. If we adopt as the supposed increase in the city and districts the ratio maintained in November and December and the first ten days of January, inst., and deduct therefrom the proportion furnished to Spring Garden, there will remain an increase of 16 per cent. to be provided for in the present year.

For one-half of this increase the Works now existing may safely be relied upon, and if the increase could with certainty be limited to a maximum of 16 per cent., it might be practicable to push them for a brief period to that extent.

But as the certainty of this limitation is by no means demonstrable, and the continuance of the increase subsequently to the present year is to be anticipated and provided for, the reasons for immediate action for a farther increase of the Works would appear to be of greater cogency, than any that can be adduced for an opposite course.

The point first to be considered after the erection of new works shall have been determined on, is the selection of a suitable location. The reasons for preferring a site beyond the densely populated portions of the city having been already communicated to the Trustees, it is unnecessary to reiterate them in this place, but it may suffice to add that farther reflection has strengthened my opinion of the propriety of adopting this course.

The cost of constructing the new works and connecting them with those now in use cannot be estimated with much precision until their locality is decided upon, but the chief items of expenditure aside from the general preparation of the ground and the laying down of the connecting main, need not and probably will not vary materially from those incurred in the recent enlargements.

For the purchase of sufficient land for the probable ultimate extent of the Works, and preparing it for that purpose, and for the erection of suitable buildings for a complete section of apparatus, laying a large independent main connecting with the old Works with a regulating gas-holder at the new site suitable for the supposed requirements for the next three or four years, the sum of three hundred thousand dollars will in my judgment be required. The whole of this amount need not be at once expended, but the scale of magnitude on which the new establishment can be laid out, and the completeness of its general arrangement, must be conformable to the amount of expenditure for which authority is granted by previous action of Councils, and in order to the most economical and beneficial application of the funds it is requisite that the initial arrangements should be commensurate with the magnitude of the Works at maturity.

Very respectfully,
JOHN C. CRESSON,
Engineer.

Philadelphia Gas Works,
January 10, 1851.

CASH ACCOUNT.

DR.

Balance on hand, January 1, 1850,	$ 16,908	91
Receipts in 1850.		
For Interest on City Loans,	4,141	00
Sales of Gas,	333,182	95
Extra Service Pipes and Meter-cocks,	5,918	62
Coke,	12,870	71
Coal Tar,	3,742	19
Lime,	1,961	66
Stone,	112	00
Old materials and sundries,	999	36
Rent of Wharf,	289	44
Rent of Office and Cellar,	140	00
Sales of Loan 7th,	197,000	00
Premium on sales of Loan 7th,	6,387	50
	$ 583,654	34

CR.

Payments in 1850.

For The construction and enlargement of the Works,	$ 117,790	44
The extension of the Street Mains,	44,565	73
Service Pipes and Meters,	31,671	89
Coal and other materials used in the manufacture of Gas, wages of Workmen, &c.,	176,964	10
Repairs of the Works, Street Mains, &c.,	25,303	06
Incidental Expenses,	34,839	69
Salaries,	6,154	16
Interest on Loans,	33,883	26
Investments on account of Sinking Fund,	67,204	00
Wharf Lot on the Schuylkill,	2,300	00
Interest on Mortgage on do.,	77	17
Stolen from the office by burglars,	369	54
Balance on hand, January 1, 1851,	42,531	30
	$ 583,654	34

STATE OF THE WORKS JANUARY 1, 1851.

Assets.

Works,	$ 475,269 46
Street Mains,	401,139 55
Service Pipes and Meters,	184,891 87
Public Lamps,	11,814 02
Cash,	42,531 30
Suspended Debt,	1,896 34
Stocks belonging to the Sinking Fund at cost,	364,764 50
Coal on hand, 235,034 bushels at 24 cents,	56,408 16
Coke on hand, 85,000 bushels at 3 cents,	2,550 00
Rosin on hand, 406 barrels at $ 1,	406 00
Due for Gas sold and delivered, and on hand,	81,758 73
Due for Coke, Tar, &c.,	3,500 00
Interest on City Loans, due January 1, 1851,	2,070 50
Wharf Lot on the Schuylkill,	6,000 00
	$ 1,635,000 43

Liabilities.

Loans 1, 2, 3, 4, 5, 6 and 7,	$ 967,000 00
Dividends unpaid,	405 00
Interest on Gas Loans, including that due January 1, 1851,	21,007 20
For Coals, repairs and materials used in the manufacture of Gas,	30,111 16
Sinking Fund,	364,795 45
Contingent Fund,	249,785 28
Profit and Loss (amount of Suspended Debt),	1,896 34
	$ 1,635,000 43

STATEMENT OF THE SINKING FUND FOR THE YEAR 1850.

1850.			
Jan'y 1,	Amount of Sinking Fund this day, - -		$317,204 78
	Increase of the Sinking Fund in the year 1850:		
June 30,	6 months' interest on $127,600 Gas Loans at 6 per cent., - - - - -		3,828 00
	5 months' interest on $20,000 Gas Loans at 6 per cent., - - - - -		500 00
	6 months' interest on $87,000 Gas Loans at 5 per cent., - - - - -		2,175 00
	6 months' interest on $25,600 City Loans at 6 per cent., - - - - -		768 00
	6 months' interest on $52,100 City Loans at 5 per cent., - - - - -		1,302 50
	6 months' appropriation of		
	2 per ct. per ann. on $475,000 of Loans 1, 2 and 3,	$4,750 00	
	3 per ct. per ann. on $125,000 of Loan 4, - - -	1,875 00	
	4 per ct. per ann. on $170,000 of Loans 5 and 6, -	3,400 00	
	5 months' appropriation of		
	4 per ct. per ann. on $66,500 of Loan 7, - - -	1,108 33	
			11,133 33
Dec. 30,	6 months' interest on $192,700 Gas Loans at 6 per cent., - - - - -		5,781 00
	6 months' interest on $87,000 Gas Loans at 5 per cent., - - - - -		2,175 00
	6 months' interest on $25,600 City Loans at 6 per cent., - - - - -		768 00
	6 months' interest on $52,100 City Loans at 5 per cent., - - - - -		1,302 50
	Carried forward,		$346,938 11

Brought forward,		$346,938 11
6 months' appropriation of		
2 per ct. per ann. on $475,000 of Loans 1, 2 and 3,	$4,750 00	
3 per ct. per ann. on $125,000 of Loan 4, - - -	1,875 00	
4 per ct. per ann. on $367,000 of Loans 5, 6 & 7, -	7,340 00	
		13,965 00
Premium on sales of Loan 7,	$6,387 50	
Less the interest from the time the Loan bore interest to the time the certificates were issued,	2,495 16	
		3,892 34
		$364,795 45

The amount invested is as follows :

1850.			
Jan'y	1,	Cost of Investments at this date, - -	$297,560 50
Mar.	22,	For $20,000 Gas 6 per ct. Loan 7, at 101½,	20,300 00
Oct.	25,	" 20,000 do. do. do. at 104,	20,800 00
Dec.	31,	" 25,100 do. do. do. at 104,	26,104 00
			$364,764 50
1851.			
Jan'y	1,	Balance not invested, - - - -	30 95
			$364,795 45

CITY AND GAS LOANS BELONGING TO THE SINKING FUND.

Five per cent. City Loans:			
	Redeemable in 1851,	$600	
	1854,	700	
	1855,	600	
	1856,	300	
	1857,	2,200	
	1858,	7,100	
	1859,	4,000	
	1861,	1,100	
	1862,	1,000	
	1863,	300	
	1864,	1,400	
	1866,	1,000	
	1867,	7,100	
	1870,	9,700	
	1871,	5,200	
	1872,	7,300	
	1873,	2,200	
	1874,	300	
			$52,100 00
Six per cent. City Loans:			
	Redeemable in 1876,		25,600 00
Six per cent. Gas Loan No. 1:			
	Redeemable in 1862,	$10,300	
Six per cent. Gas Loan No. 2:			
	Redeemable in 1863,	36,700	
Six per cent. Gas Loan No. 3:			
	Redeemable in 1861,	30,400	
Six per cent. Gas Loan No. 5:			
	Redeemable in 1868,	36,100	
Six per cent. Gas Loan No. 6:			
	Redeemable in 1869,	14,100	
Six per cent. Gas Loan No. 7:			
	Redeemable in 1870,	65,100	
			192,700 00
Five per cent. Gas Loan No. 4:			
	Redeemable in 1866,		87,000 00
			$357,400 00
The cost of the above was			$364,764 50

STATEMENT OF THE PROFIT AND LOSS ACCOUNT FOR THE YEAR 1850.

1850.				
Jan'y	1,	Amount due for Coals, Materials and Repairs, chargeable to the manufacture of Gas,	$51,089	58
Dec.	31,	Sales of Gas in 1850,	333,182	95
		" of Coke "	12,870	71
		" of Tar "	3,742	19
		" of Lime "	1,961	66
		" of Stone "	112	00
		" of Old Materials and sundries,	999	36
		Rent of Wharf,	289	44
		Rent of Office and Cellar,	140	00
		Premium on Sales of Loans,	3,892	34
		Interest to the time when the Loans were sold,	2,495	16
		Stock on hand, January 1, 1851:		
		Coal,	56,408	16
		Coke,	2,550	00
		Rosin,	406	00
		Gas delivered,	81,758	73
		Due for Coke, Lime, Tar, &c.,	3,500	00
		Suspended Debt,	1,896	34
			$557,294	62

Jan'y	1,	Amount of Stock on hand and debts due to the Works at this time,	$142,856	00
Dec.	31,	Payments during the year, and other charges against the manufacture of Gas:		
		Coal and other Materials and Wages,	176,964	10
		Repairs,	25,303	06
		Incidental charges,	34,839	69
		Salaries,	6,154	16
		Interest on Mortgage on Wharf Lot,	77	17
		Carried forward,	$386,194	18

Brought forward,	$ 386,194	18
Premium on sales of Loan, appropriated to the Sinking Fund, as directed by Ordinance,	3,892	34
Appropriated to the Sinking Fund, as directed by Ordinance,	25,098	33
Interest on Loans for the year 1850,	52,522	50
Amount due January 1, 1851, for Coal, Repairs and Materials used in the manufacture of Gas,	30,111	16
Suspended Debt, January 1, 1850,	1,862	50
Stolen from the Office by burglars,	369	54
Balance,	57,244	07
	$ 557,294	62

The above balance of	$ 57,244	07
Less the sum of	33	84
the increase of the Suspended Debt, during the year, gives the net increase of the Contingent Fund for 1850,	57,210	23

STATEMENT OF THE CONTINGENT FUND FOR 1850.

Amount of the Fund, January 1, 1850,	$ 192,575 05
Increase during the year, as per Profit and Loss Account,	57,210 23
	$ 249,785 28

The amount raised under various Ordinances for the construction and enlargement of the Works, and for extraordinary repairs and renewals, has been, to January 1, 1851:

Loans 1, 2, 3, 4, 5, 6, 7,	$ 967,000 00
Contingent Fund, derived from profits,	249,785 28
	$ 1,216,785 28

The amount expended has been:

Construction of Works,	$ 475,269 46
Street Mains,	401,139 55
Service Pipes and Meters,	184,891 87
Public Lamps,	11,814 02
Wharf Lot on the Schuylkill,	6,000 00
Working Capital,	137,670 38
	$ 1,216,785 28

The Liabilities of the Works, January 1, 1851, are as follows:

Construction of Works,	$ 39,600 00
Street Mains, Service Pipes and Meters,	16,600 00
Coals, Repairs and Materials used in the manufacture of Gas,	30,111 16
Total,	$ 86,311 16

1850. ENGINEER'S ACCOUNTS. 1850.

PAYMENTS FOR PERMANENT IMPROVEMENTS.

WORKS.	*Dolls.*	*C.*
Wages of laborers and fitters employed in erecting new works,	21224	21
Gas-holder and framing,	43500	00
Castings,	15680	06
Carting,	4612	36
Stone,	4524	16
Mason work,	4228	82
Bricks,	3998	77
Lumber,	3389	11
Fire bricks and tiles,	2720	15
Bricklaying,	1980	89
Iron roof frame,	1791	15
Lime,	1698	84
Meter and marble for do.,	1677	52
Slating,	1237	54
Cement,	1082	74
Tin work,	933	18
Iron,	700	91
Powder,	592	75
Iron safe,	210	00
Gas fixtures,	210	00
Wheelwright work,	208	20
Sheet lead,	186	76
Chandlery,	181	85
Transit and mathematical instruments,	142	59
Sand and dirt,	143	15
Oar and hoop poles	145	14
Hardware and iron borings,	128	74
Plastering,	119	20
Furnace, register and ventilator,	111	50
Excavator,	100	60
Paints,	68	72
Scales,	62	00
Furniture for office at works,	90	00
Mica and glass,	37	47
Pump buckets and leather,	21	57
Cotton duck,	24	24
Opening water course,	12	00
Trunk boards,	11	55
Permit for water	2	00
Total,	117790	44

STREET MAINS.	*Dolls.*	*C.*
Wages of men employed in laying mains in streets,	4528	10
Pipes and castings	36134	08
Paving,	1594	98
Lead,	1154	87
Chandlery,	606	10
Carting,	345	26
Proving pipes,	122	89
Lumber,	68	72
Turning plugs,	10	73
Total,	44565	73

SERVICES.	*Dolls.*	*C.*
Wages of men engaged in laying service pipes and setting and fitting up meters,	3028	58
Meters,	19236	20
Tubing,	4383	34
Stop cocks,	2543	97
Paving,	1180	83
Lead pipe,	413	18
Lumber,	371	44
Iron,	227	88
Damages by laying service pipes,	150	00
Paints,	56	75
Burners,	36	37
Castings,	23	35
Lamp irons,	12	00
Turning,	8	00
Total,	31671	89

1850. ENGINEER'S ACCOUNTS. 1850.

PAYMENTS FOR CURRENT EXPENSES.

GAS.	Dolls.	C.
Wages of stokers, &c., employed in retort houses and purifying houses, manufacturing gas and wheeling coals,	37414	32
Coals,	124839	20
Freights on coals,	3036	21
Measuring and carting coals,	5155	00
Rosin,	2320	75
Lime and shells,	3921	72
Duties,	276	90
Total,	176964	10

REPAIRS.	Dolls.	C.
Wages of carpenters, blacksmiths, fitters and laborers engaged in repairs of works, street mains and services,	7120	34
Castings,	7049	69
Fire bricks and clay retorts,	3973	23
Meters,	2534	33
Iron,	1014	19
Bricks,	849	37
Hardware,	835	74
Tin work,	377	18
Wharf,	374	00
Lime kiln,	352	13
Pumps,	189	25
Paints, glass and oil,	186	07
Gas fixtures and plumbing,	122	92
Sand,	84	95
Wire work,	38	92
Iron turnings,	34	19
Leather work,	27	78
Paving,	29	26
Lumber,	25	58
Trunk boards,	21	79
Tallow and muslin,	20	40
Roman cement,	12	00
Repairing meter clock,	12	00
Grindstones,	11	25
Carting,	5	25
Cleaning scales,	1	25
Total,	25303	06

INCIDENTALS.	Dolls.	C.
Wages of men employed in the inspection of fittings and meters, taking statements for bills, in care of public lamps, storing coals and coke at works, clerk hire at works, measuring coke and lime and all other incidental matters not appertaining to other specified heads,	22074	69
Rents,	5412	50
Taxes and water,	1674	60
Alcohol and muriate of lime,	1517	41
Heating apparatus,	656	00
Carting,	262	26
Stationery,	521	20
Matting,	207	76
Exchange on Liverpool,	247	22
Subscription and advertising in newspapers,	138	00
Barrels for tar,	136	00
Horse keep,	128	46
Submarine dress,	125	00
Trimming and planting trees,	42	62
Brooms and baskets,	78	07
Paints and oil,	54	94
Reports of lighting,	48	00
Gas fittings,	39	78
Freights,	36	85
Stove,	21	85
Hardware,	10	58
Pliers,	15	12
Turning,	5	00
Miscellaneous expenses of offices, postages, &c.,	1385	78
Total,	34839	69

A

CITY REGISTRY.

DATE.	APPLICATIONS.	REMOVALS. DISCONTINUANCES.	PRIVATE LIGHTS.		PUBLIC LIGHTS.		
1850.			Added.	Total.	Streets.	Market Houses.	Squares.
To Jan. 1st.	15714	7575		94462	1392	37	62
January.	150	87	1497	95959	5		
February.	109	72	1173	97132	1		
March.	149	93	827	97959	3		
April.	176	100	1422	99381		13	
May.	215	102	1525	100906			
June.	149	70	1437	102343	8		
July.	128	63	1136	103479	9		
August.	178	101	1727	105206	4		
September.	262	139	2343	107549	16		
October.	291	142	2650	110199	2		
November.	249	103	2661	112860	18		
December.	171	78	2144	115004	6		
Total.	2227	1150	20542		72	13	
Bt. down.	15714	7575			1392	37	62
Grand total.	17941	8725		115004	1464	50	62

REGISTRY OF THE DISTRICTS.

	PRIVATE LIGHTS.	PUBLIC LIGHTS.	M. H.
Spring Garden,	25231	288	
Southwark,	2825	82	9
Moyamensing,		11	
Totals,	28056	381	9

B

DATE.	SERVICES LAID.	METERS SET.								PUBLIC LAMPS.		
1850.		3 light.	5 light.	10 light.	20 light.	30 light.	45 light.	60 light.	100 light.	On posts.	On wall.	Market houses.
To Jan. 1st.	8159	4258	2325	1276	203	51	27	6	13	1197	195	37
Jan'y.	64	30	22	10	1			1		4	1	
Feb'y.	40	15	10	15						1		
March.	60	33	15	10	2					3		
April.	76	33	23	14	5				1			13
May.	104	34	47	20	2	1						
June.	89	30	48	8	1	1	1			7	1	
July.	64	24	26	10	4					7	2	
Aug.	68	28	24	13	2			1		3	1	
Sept'r.	114	37	57	13	6	1				16		
Oct'r.	150	41	70	21	15	3				2		
Nov'r.	129	66	33	21	5	1		1	2	16	2	
Dec'r.	121	64	37	10	7	1	2			4	2	
Total.	1079	435	412	165	50	8	3	3	3	63	9	13
Bt.down	8159	4258	2325	1276	203	51	27	6	13	1197	195	37
Gd.total	9238	4693	2737	1441	253	59	30	9	16	1260	204	50

C

DATE.	MAIN PIPES LAID IN STREETS, LINEAL FEET.										
1850.	1½ inch.	2 inch.	3 inch.	4 inch.	6 inch.	8 inch.	10 inch.	12 inch.	16 inch.	20 inch.	Total.
To Jan. 1st.	426	69606	187708	118006	35365	25182	14324	13500	10413	495	475025
Jan'y.											
Feb'y.											
March.											
April.			1665	801							2466
May.		1506	2268	828	531						5133
June.		1968	135	963	648						3714
July.		1104	234		846						2184
Aug.		516	1629	18	171						2334
Sept'r.		156	666	144							966
Oct'r.		522	1674	1728							3924
Nov'r.		894	945	1638	522						3999
Dec'r.			297	225							522
Total.		6666	9513	6345	2718						25242
Bt.down	426	69606	187708	118006	35365	25182	14324	13500	10413	495	475025
Gd.total	426	76272	197221	124351	38083	25182	14324	13500	10413	495	500267 *

* Or 94¾ miles.

D

REPAIRS OF SERVICES.

1850.	STOP COCKS RENEWED.	NEW COVERS FOR STOP COCK BOXES.	SERVICES RENEWED.	NEW STOP COCK BOXES.
January,	5	8	5	4
February,	7	11	7	9
March,	4	7	5	7
April,	13	9	11	15
May,		1		
June,	3	1	2	4
July,	5	6	2	6
August,	2	4	1	5
September,	1	1		6
October,		4		2
November,	1	2		1
December,	2	1		5
Total,	43	55	33	64

E

STATEMENT OF GAS PAID FOR IN EACH MONTH OF THE YEAR, being amount of bills as per Meters to the first day of the month.

1850.	FEET OF GAS CONSUMED AT PRIVATE HOUSES.	PUBLIC LAMPS.	DISTRICTS.			TOTAL.
			SPRING GARDEN.	SOUTH-WARK.	MOYA-MENSING.	
January,	14653400		4237500	1192100	75400	20158400
February,	13779200					13779200
March,	12285500	9201100				21486600
April,	14531100		4850000	927500	79700	20388300
May,	11089000					11089000
June,	10164400	6514650				16679050
July,	8973400		3337000	660700	108600	13079700
August,	5635200					5635200
September,	5066700	5259700				10326400
October,	7722000		2587000	613800	99100	11021900
November,	9855400					9855400
December,	11507700	7507350				19015050
	125263000	28482800	15011500	3394100	362800	172514200

Inventory of Stock of Gas delivered and on hand— *Feet.*
January 1st, 1851, 43251300
January 1st, 1850, 34498000
8753300

Total in the year ending December 31st, 1850, 181267500

F

ANNUAL REGISTRY OF CONSUMERS AND OF PRIVATE AND PUBLIC LIGHTS.

DATE.	APPLICATIONS.	REMOVALS, DISCONTINUANCES	TOTAL NUMBER OF CONSUMERS.	PRIVATE LIGHTS.		PUBLIC LIGHTS.			
To Dec. 31st.				Added.	Total.	Streets.	Market houses.	Squares	Total.
1836,	301	24	277	2952	2952	165			165
1837,	497	108	666	3862	6814	136			301
1838,	849	174	1341	4288	11102	133		62	496
1839,	946	300	1987	5380	16482	162	18		676
1840,	788	382	2393	3317	19799	112	1		789
1841,	874	493	2774	4387	24186	13	8		810
1842,	845	511	3078	3054	27240	30			840
1843,	986	635	3429	3418	30658	59			899
1844,	1000	503	3926	4940	35598	195			1094
1845,	1147	629	4444	5754	41352	112			1206
1846,	1465	717	5192	8138	49490	96			1302
1847,	1869	887	6174	12987	62477	84	10		1396
1848,	1956	1002	7128	13935	76412	21			1417
1849,	2191	1180	8139	18050	94462	74			1491
1850,	2227	1156	9216	20542	115004	72	13		1576
Total,	17941	8725		115004		1464	50	62	

G

STATEMENT OF METERS SET EACH YEAR.

DATE.		METERS SET.							
To Dec. 31st.	SERVICES LAID.	3 light.	5 light.	10 light.	20 light.	30 light.	45 light.	60 light.	100 light.
1836,	251	108	98	31	9	2	3		
1837,	411	301	77	19	6	2	3		3
1838,	690	442	159	61	13	9	2	1	3
1839,	649	421	118	75	26	6	3		
1840,	350	198	78	54	13	3	2		2
1841,	375	203	93	63	14	2			
1842,	299	157	76	57	6	3			
1843,	348	180	110	50	7	1			
1844,	503	292	129	72	5	3	1		1
1845,	523	311	151	49	7	4		1	
1846,	761	390	237	113	14	4	2	1	
1847,	999	481	300	202	12	1	3		
1848,	971	408	333	196	25	4	3	1	1
1849,	1029	366	366	234	46	7	5	2	3
1850,	1079	435	412	165	50	8	3	3	3
Totals,	9238	4693	2737	1441	253	59	30	9	16

H

LENGTH OF MAINS LAID IN STREETS EACH YEAR, IN LINEAL FEET.

DATE.	1½ inch.	2 inch.	3 inch.	4 inch.	6 inch.	8 inch.	10 inch.	12 inch.	16 inch.	20 inch.	Total.
1836,		2310	15951	10184	4018		9140				41603
1837,		3468	13068	4302	6984						27822
1838,		150	15660	14409	9036		27	10881	2340		52503
1839,		1704	11629	11997	4419	3726					33475
1840,		222	1674	576	261						2733
1841,		204	8874	7137	27						16242
1842,		324	6831	3483	360	774					11772
1843,		966	32796	16767	1395	1053					52977
1844,		30696	38655	23555	2358	3663	891				99818
1845,	426	3240	9360	4725	837						18588
1846,		10734	9855	8442	378	2070					31479
1847,		4164	6660	2808	900	135					14667
1848,		1734	7578	3897	1458	477					15144
1849,		9690	9117	5724	2934	13284	4266	2619	8073	495	56202
1850,		6666	9513	6345	2718						25242
Total,	426	76272	197221	124351	38083	25182	14324	13500	10413	495	500267

I

STATEMENT OF GAS DELIVERED TO PUBLIC AND PRIVATE LIGHTS TO DECEMBER 31st IN EACH YEAR.

YEAR.	PUBLIC LIGHTS.	PRIVATE LIGHTS.	SPRING GARDEN.	SOUTH-WARK.	MOYA-MENSING	Used at offices, shop & works, & loss by leakage, &c.	MADE AT WORKS.
1836,	978812	4752740				749748	6481300
1837,	1397687	14454891				1226122	17078700
1838,	3013546	22366004				1977450	27357000
1839,	6280654	30658145				2534201	39473000
1840,	8028818	34874380				2506802	45410000
1841,	10208180	39648000				1415820	51272000
1842,	13292000	36596830				922170	50811000
1843,	12985851	34579900				1324249	48890000
1844,	13608356	40022800				1152844	54784000
1845,	17373798	46702800				926402	65003000
1846,	19164106	55219800	163400			906694	75454000
1847,	19122293	68071600	2507100			1846007	91547000
1848,	19924700	78921350	6817000			1109950	106773000
1849,	24524950	96247100	10713200	2322800	195800	1505150	135509000
1850,	28482800	131258400	17650600	3457800	417900	748500	182016000
							997859000

NOTE.

The price of Gas at the commencement of the Works was fixed by Ordinance of Councils at three dollars and fifty cents per thousand cubic feet, and a discount of five per cent. was allowed for prompt payment—the meters and service pipes being furnished by the Works free of cost to the consumer. In September, 1844, the price was reduced by increasing the discount to twelve and a half per cent.; and under the system then introduced, it has been successively lowered to three dollars per thousand cubic feet in 1845; to two dollars and eighty cents, and two dollars and fifty cents, in 1846; and to the present price of two dollars and twenty-five cents in 1848—with the usual discount of five per cent. for payments within five days from the rendering of the bills.

A COMPLETE LIST of the Trustees of the Philadelphia Gas Works, from the commencement, in the order of their appointment.

Elections by Select Council, March 26th, 1835.

Benjamin W. Richards, John R. Latimer,	for one year.
A. D. Bache, W. H. Keating,	for two years.
J. P. Wetherill, H. M. Zollickoffer,	for three years.

Elections by Common Council.

John Farr, R. M. Huston,	for one year.
Frederick Fraley, Ephraim Haines,	for two years.
M. W. Baldwin, Thomas Cave,	for three years.

B. W. RICHARDS, President.
SAMUEL V. MERRICK, Engineer.
BENJAMIN MATTHIAS, Secretary.

B. W. Richards resigned the Presidency June 20th, 1835.

Dr. R. M. Huston elected President July 10th, 1835.

Dr. J. K. Mitchell elected July 9th, 1835, in place of B. W. Richards, resigned.

John Siter elected January 28th, 1836, in place of J. K. Mitchell, resigned.

Benjamin Matthias, Secretary, resigned March, 1836.

Frederick Brown elected January 19th, 1837, in place of A. D. Bache.

Samuel V. Merrick, Engineer, resigned February, 1837.

Alexander Ferguson elected November 23d, 1837, in place of Ephraim Haines, deceased.

John Wiegand elected April 12th, 1838, in place of H. M. Zollickoffer, resigned.

A. D. Bache elected September 27th, 1838, in place of John Siter, resigned.

George Handy elected January 30th, 1839, in place of J. R. Latimer, resigned.

Thomas Cave elected President in place of Dr. R. M. Huston, resigned, June 28th, 1839.

Charles Gilpin elected January 14th, 1841, in place of W. H. Keating, deceased.

Thomas S. Smith elected January 28th, 1841, in place of M. W. Baldwin.

G. H. Burgin elected January 20th, 1842, in place of George Handy.

Isaac Myer elected January 20th, 1842, in place of R. M. Huston.

Samuel Norris elected January 19th, 1843, in place of Alexander Ferguson.

Isaac Barton elected January 18th, 1844, in place of Thomas S. Smith.

John C. Davis elected November 7th, 1844, in place of A. D. Bache, resigned.

Frederick Fraley elected President in place of Thomas Cave, deceased, March 28th, 1845.

Joseph S. Lovering elected April 10th, 1845, in place of Thomas Cave, deceased.

John Trucks elected June 19th, 1845, in place of Charles Gilpin, resigned.

Jacob E. Hagert elected January 29th, 1846, in place of Frederick Brown.

Frederick Brown elected March 25th, 1847, in place of John Farr, deceased.

M. W. Baldwin elected October 28th, 1847, in place of John Trucks, resigned.

John Agnew elected December 23d, 1847, in place of J. E. Hagert, resigned.

William Morris elected January 20th, 1848, in place of J. C. Davis.

John F. Gilpin elected January 20th, 1848, in place of G. H. Burgin.

G. H. Burgin elected April 6th, 1848, in place of J. S. Lovering, resigned.

John C. Davis elected April 13th, 1848, in place of W. Morris, resigned.

James Traquair elected January 18th, 1849, in place of Frederick Brown, resigned.

John Lindsay elected December 20th, 1849, in place of J. P. Wetherill, resigned.

Lewis Cooper elected December 20th, 1849, in place of J. C. Davis, resigned.

On the 20th December, 1849, Councils appointed from their own body, the Committee on Gas, consisting of four members, to deliberate with this Board, viz.

John Price Wetherill, Albert G. Waterman,	*by Select Council.*
Thomas J. Perkins, John C. Davis,	*by Common Council.*

B. M. Feltwell elected January 31st, 1850, in place of Isaac Barton, resigned.

E. A. Souder elected January 31st, 1850, in place of A. G. Waterman, resigned.

E. Y. Farquhar elected March 15th, 1850, in place of J. Lindsay, resigned.

John C. Davis elected October 24th, 1850, in place of E. Y. Farquhar, resigned.

Charles Lennig elected October 24th, 1850, in place of John Agnew, resigned.

John Agnew elected October 11th, 1850, in place of John C. Davis, resigned.

E. Y. Farquhar elected October 11th, 1850, in place of E. A. Souder, resigned.

Benjamin Gerhard elected January, 1851, in place of Isaac Myer, resigned.

BOARD OF TRUSTEES, 1851.

FREDERICK FRALEY, President.
MATTHIAS W. BALDWIN,
JOHN WIEGAND,
DR. GEORGE H. BURGIN,
SAMUEL NORRIS,
JOHN F. GILPIN,
JOHN C. DAVIS,
JAMES TRAQUAIR,
LEWIS COOPER,
BENJAMIN M. FELTWELL,
CHARLES LENNIG,
BENJAMIN GERHARD.

Committee on Gas.

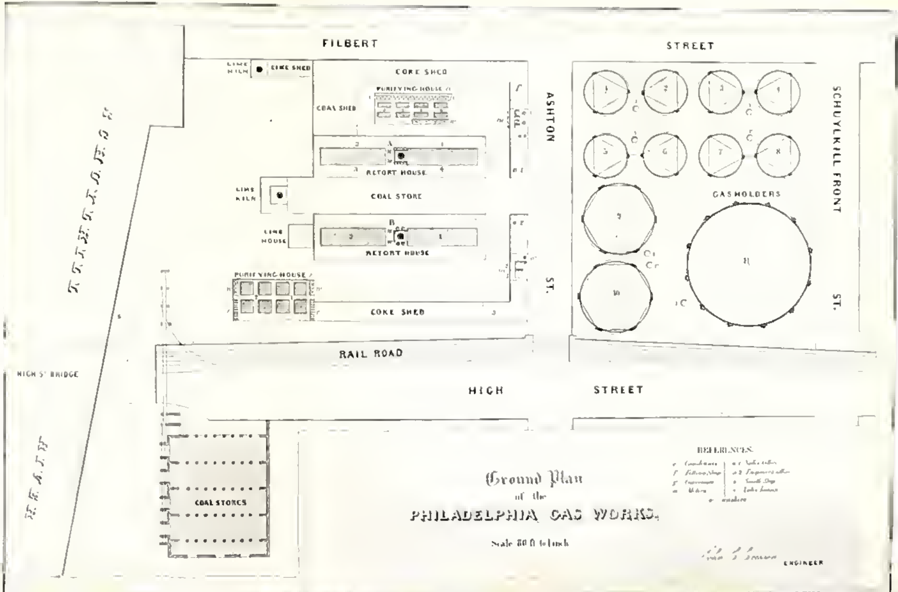
JOHN PRICE WETHERILL, Chairman.
THOMAS J. PERKINS,
JOHN AGNEW,
E. Y. FARQUHAR.

Engineer.

JOHN C. CRESSON,
Appointed Aug. 26th, 1836.

Register.

WILLIAM FENNELL,
Appointed March 31st, 1836.



Ground Plan of the PHILADELPHIA GAS WORKS.

Scale 80 ft to 1 inch